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21 Active network vision and reality: lessons from a capsule-based system
David Wetherall
December 1999 **ACM SIGOPS Operating Systems Review , Proceedings of the seventeenth ACM symposium on Operating systems principles**, Volume 33 Issue 5
Full text available: pdf(1.87 MB) Additional Information: full citation, abstract, references, citings, index terms

Although active networks have generated much debate in the research community, on the whole there has been little hard evidence to inform this debate. This paper aims to redress the situation by reporting what we have learned by designing, implementing and using the ANTS active network toolkit over the past two years. At this early stage, active networks remain an open research area. However, we believe that we have made substantial progress towards providing a more flexible network layer while ...

22 DDD papers: Domain driven web development with WebJinn
Sergei Kojarski, David H. Lorenz
October 2003 **Companion of the 18th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**
Full text available: pdf(266.32 KB) Additional Information: full citation, abstract, references, index terms

Web application development cuts across the HTTP protocol, the client-side presentation language (HTML, XML), the server-side technology (Servlets, JSP, ASP, PHP), and the underlying resource (files, database, information system). Consequently, web development concerns including functionality, presentation, control, and structure cross-cut, leading to tangled and scattered code that is hard to develop, maintain, and reuse. In this paper we analyze the cause, consequence, and remedy for this cros ...

Keywords: JSP, adaptability, aspect-oriented programming (AOP), crosscutting concerns, dynamic pages, generative programming, inter-crosscutting, intra-crosscutting, model-view-controller (MVC), reusability, scattering, struts, tangling, web application, web development, web programming

23 CodeBricks: code fragments as building blocks
Giuseppe Attardi, Antonio Cisternino, Andrew Kennedy
June 2003 **Proceedings of the 2003 ACM SIGPLAN workshop on Partial evaluation and semantics-based program manipulation**
Full text available: Additional Information:

pdf(294.34 KB) full citation, abstract, references, index terms

We present a framework for code generation that allows programs to manipulate and generate code at the source level while the joining and splicing of executable code is carried out automatically at the intermediate code/VM level. The framework introduces a data type Code to represent code fragments: methods/operators from this class are used to reify a method from a class, producing its representation as an object of type Code. Code objects can be combined by partial application to other Code ob ...

Keywords: domain specific language, generative programming, metaprogramming, multistage programming, program generation, program transformation, reflection

24 Component framework infrastructure for virtual environments
Manuel Oliveira, Jon Crowcroft, Mel Slater
September 2000 **Proceedings of the third international conference on Collaborative virtual environments**
Full text available: pdf(1.14 MB) Additional Information: full citation, abstract, references, citings, index terms

Virtual Environments (VE) present a complex problem with interesting non-trivial challenges for system development, in particular when the VE is distributed and shared amongst multiple participants. Most problems are common to any VE system, however the development effort is replicated because current systems are neither evolutionary nor allow integration of code across different systems. This paper presents the Java Adaptive Dynamic Environment (JADE), which consists of a light- ...

Keywords: components, framework, java, virtual environments, virtual reality, vrtp

25 An architecture for heterogeneous groupware applications
Ivan Marsic
July 2001 **Proceedings of the 23rd international conference on Software engineering**
Full text available: pdf(1.13 MB) Publisher Site Additional Information: full citation, abstract, references, citings, index terms

The proliferation of wireless networks and small portable computing devices raises the need for applications that are adaptable to heterogeneous computing and communication environments and the contexts in which they are used. However, most current groupware systems as well as other software applications are not well prepared to handle the heterogeneity. The Manifold framework presented here provides a software architecture for synchronous groupware applications to deal with heterogeneity. ...

26 Architectural framework modeling in telecommunication domain
Giulio Fregonese, Alessandro Zorer, Giovanni Cortese
May 1999 **Proceedings of the 21st international conference on Software engineering**
Full text available: pdf(1.12 MB) Additional Information: full citation, references, citings, index terms

Keywords: architectural patterns, design patterns, distributed systems, domain analysis, network and service management, network traffic data analysis, object-oriented framework, software architecture, software reuse

27 OQL_SERF: an ODMG implementation of the template-based schema evolution

framework
Kajal T. Claypool, Jing Jin, Elke A. Rundensteiner
November 1998 **Proceedings of the 1998 conference of the Centre for Advanced Studies on Collaborative research**
Full text available: pdf(333.22 KB) Additional Information: full citation, abstract, references, index terms

With rapid progress in application development and technologies, there is an increasing need to specify and handle complex schema changes of databases. The existing support for schema evolution in current OODB systems is limited to a pre-defined taxonomy of simple schema evolution operations with fixed semantics. We have proposed an extensible framework for schema transformations to address this open problem. The SERF framework succeeds in giving the user the *flexibility* to define the sem ...

28 Migrating E-commerce database applications to an enterprise Java environment
Terence C. Lau, Jianguo Lu, Erik Hedges, Emily Xing
November 2001 **Proceedings of the 2001 conference of the Centre for Advanced Studies on Collaborative research**
Full text available: pdf(572.66 KB) Additional Information: full citation, abstract, references, index terms

As technology evolves over time, a common problem is the migration of software applications from one technology base to another. This paper is a practical experience report based on IBM Net.Commerce to WebSphere Commerce Suite (WCS) migration. It identifies the problems and issues in the migration of applications using traditional database access (SQL) to applications using the Enterprise Java Bean (EJB) programming model, and presents a practical methodology in facilitating such migration. It a ...

Keywords: E-commerce, JSP, Net.data, SQL, database re-engineering, enterprise Javabean, migration, relational-object mapping

29 Web and e-business application: User adaptive content delivery mechanism on the world wide web
Tadashi Nakano, Kaname Harumoto, Shinji Shimojo, Shojiro Nishio
March 2002 **Proceedings of the 2002 ACM symposium on Applied computing**
Full text available: pdf(1.00 MB) Additional Information: full citation, abstract, references, index terms

To reduce the user-perceived latency in web content delivery, many techniques have been proposed. One is a transmission time control mechanism that automatically adjusts the quality of inline objects, such as images on a web page, according to the client network bandwidth. Another is a transmission order control mechanism that can transmit inline objects in a specified order preferred by users. In this paper, we describe the development of a user adaptive content delivery mechanism that integrat ...

Keywords: HTTP extension, WWW, content adaptation, content delivery, quality of service, transmission order control, transmission time control, user profile

30 Tools and approaches for developing data-intensive Web applications: a survey
Piero Fraternali
September 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 3
Full text available: pdf(524.80 KB) Additional Information: full citation, abstract, references, citings, index terms

The exponential growth and capillar diffusion of the Web are nurturing a novel generation of applications, characterized by a direct business-to-customer relationship. The development of such applications is a hybrid between traditional IS development and Hypermedia authoring, and challenges the existing tools and approaches for software production. This

paper investigates the current situation of Web development tools, both in the commercial and research fields, by identifying and characte ...

Keywords: HTML, Intranet, WWW, application, development

31 Help design challenges in network computing
Ben Gelernter
September 1998 **Proceedings of the 16th annual international conference on Computer documentation**
Full text available: pdf(1.12 MB) Additional Information: full citation, references, index terms

Keywords: documentation, help, information architecture, network computing, network computing architecture, online help, thin clients, user assistance

32 Exception handling in large Ada systems
C. Howell, D. Mularz
June 1991 **Proceedings of the eighth annual Washington Ada symposium & summer SIGAda meeting on Ada: software: foundation for competitveness**
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33 Industry track papers and presentations: technology trends: Building enterprise portals: principles to practice
Tushar K. Hazra
May 2002 **Proceedings of the 24th international conference on Software engineering**
Full text available: pdf(1.85 MB) Additional Information: full citation, abstract, references, index terms

Primary objective of this paper is to offer an exclusive view of constructing and deploying enterprise portals by using a component-based development approach. As the dot-com hype dies down, most companies are forced to revisit their enterprise-wide Web integration strategies. This paper offers a pragmatic roadmap that these companies may follow in their upcoming enterprise portal deployment initiatives.The academic world plays a significant role in the advances of the portal technology. In this ...

34 Visual models of plants interacting with their environment
Radomir Měch, Przemyslaw Prusinkiewicz
August 1996 **Proceedings of the 23rd annual conference on Computer graphics and interactive techniques**
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Keywords: L-system, clonal plant, ecosystem, modeling, plant development, realistic image synthesis, root, scientific visualization, simulation, software design, tree

35 4a—Adaptive Hypertext: Personally tailored teaching in WHURLE using conditional transclusion
Adam Moore, Timothy J. Brailsford, Craig D. Stewart
September 2001 **Proceedings of the twelfth ACM conference on Hypertext and Hypermedia**

Full text available: pdf(80.75 KB) Additional Information: full citation, abstract, references, citings, index terms

The emergence of Technology Based Learning has generated a number of pedagogic problems related to learner diversity.. In this paper we present an interim snapshot of a prototype XSLT / XML hypermedia learning environment able to respond adaptively to individual learner profiles using conditional transclusion.

Keywords: XML, XSLT, adaptive hypermedia, learning environment, transclusion

36 Technical opinion: Comonent-based data mining frameworks
Fernando Berzal, Ignacio Blanco, Juan-Carlos Cubero, Nicolas Marin
December 2002 **Communications of the ACM**, Volume 45 Issue 12

Full text available: pdf(110.82 KB) html(18.89 KB) Additional Information: full citation, abstract, references, index terms

OLAP Vs. OLTP in the middle tier.

37 Web and e-business application: A framework for automatic generation of web-based data entry applications based on XML
Volker Turau
March 2002 **Proceedings of the 2002 ACM symposium on Applied computing**

Full text available: pdf(635.47 KB) Additional Information: full citation, abstract, references, index terms

This paper presents a framework for web-based data entry applications. It introduces a method for the conceptional and the navigational design based on a textual specification in the form of an XML-application. This forms the input to a code generation environment allowing for real automated prototyping. The environment produces fully functional skeletons for the web pages. Together with the framework classes they can be utilized for testing and for requirements review. They also form the starti ...

Keywords: automated prototyping, frameworks, web-based data entry

38 Fast detection of communication patterns in distributed executions
Thomas Kunz, Michiel F. H. Seuren
November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

Full text available: pdf(4.21 MB) Additional Information: full citation, abstract, references, index terms

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

39 Polymorphic time systems for estimating program complexity
Vincent Dornic, Pierre Jouvelot, David K. Gifford
March 1992 **ACM Letters on Programming Languages and Systems (LOPLAS)**, Volume 1 Issue 1

Full text available: pdf(807.35 KB) Additional Information: full citation, abstract, references, citings, index terms

We present a new approach to static program analysis that permits each expression in a program to be assigned an execution time estimate. Our approach uses a time system in conjunction with a conventional type system to compute both the type and the time of an expression. The time of an expression is either an integer upper bound on the number of ticks the expression will execute, or the distinguished element long that indicates that the expression contains ...

Keywords: complexity analysis, effect systems, fixpoint operator, polymorphic typed language, time and type checker, time system, type systems

40 A widely deployable Web-based network simulation framework using CORBA IDL-based APIs
Arjun Cholkar, Philip Koopman
December 1999 **Proceedings of the 31st conference on Winter simulation: Simulation---a bridge to the future - Volume 2**

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DOVE: Distributed Objects based scientific Visualization.. - Abbott, Jain (1998) (Correct) (2 citations)
working applications. 1 2 Distributed, **Three-tier Framework** for Scientific Visualization 2.1 Example Data
2.2 Architectural Design Wehave a **three-tier framework** with the client visualization components In
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the layout. In this paper we present a **three-tier framework** called Wizard for web-based data entry
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4. TechWeb > News > Java Goes Upscale > September 28, 1998
... will move its San Francisco Java business-component framework further up ... computer
giant consolidated its disparate middle-tier development technologies under ...
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6. Java Goes Upscale
... will move its San Francisco Java business component framework farther up ... Last week,
IBM consolidated its disparate middle-tier development technologies under ...
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7. DotNetInfoWire.com - The online resource for Microsoft .NET ...
... Database driven grid component based on ASP and DHTML behaviors. Added on: 10/15/2002.
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8. Amazon.com: Books: Developing Enterprise Applications -An ...
... the architectural reasoning behind each framework component decision and ... The concepts
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component model extends ... languages on the proven, standard CORBA framework. ...
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3- and n-Tier Architectures

Contents

- Introduction
- Why 3-tier
- What is 3-tier-architecture
- Advantages
- Critical Success Factors

Introduction

Through the appearance of Local-Area-Networks, PCs came out of their isolation, and were soon not only being connected mutually but also to servers. Client/Server-computing was born.

Servers today are mainly file and database servers; application servers are the exception. However, database-servers only offer data on the server; consequently the application intelligence must be implemented on the PC (client). Since there are only the architecturally tiered data server and client, this is called 2-tier architecture. This model is still predominant today, and is actually the opposite of its popular terminal based predecessor that had its entire intelligence on the host system.

One reason why the 2-tier model is so widespread, is because of the quality of the tools and middleware that have been most commonly used since the 90's: Remote-SQL, ODBC, relatively inexpensive and well integrated PC-tools (like Visual Basic, Power-Builder, MS Access, 4-GL-Tools by the DBMS manufactures). In comparison the server side uses relatively expensive tools. In addition the PC-based tools show good Rapid-Application-Development (RAD) qualities i.e. that simpler applications can be produced in a comparatively short time. The 2-tier model is the logical consequence of the RAD-tools' popularity : for many managers it was and is simpler to attempt to achieve efficiency in software development using tools, than to choose the steep and stony path of "brainware".

Why 3-tier?

Unfortunately the 2-tier model shows striking weaknesses, that make the development and maintenance of such applications much more expensive.

- The complete development accumulates on the PC. The PC processes and presents information which leads to monolithic applications that are expensive to maintain. That's why it's called a "fat client".
- In a 2-tier architecture, business-logic is implemented on the PC. Even the business-
- logic never makes direct use of the windowing-system, programmers have to be trained for the complex API under Windows.
- Windows 3.X and Mac-systems have tough resource restrictions. For this reason applications programmers also have to be well trained in systems technology, so that they can optimize scarce resources.
- Increased network load: since the actual processing of the data takes place on the remote client, the data has to be transported over the network. As a rule this leads to increased network stress.

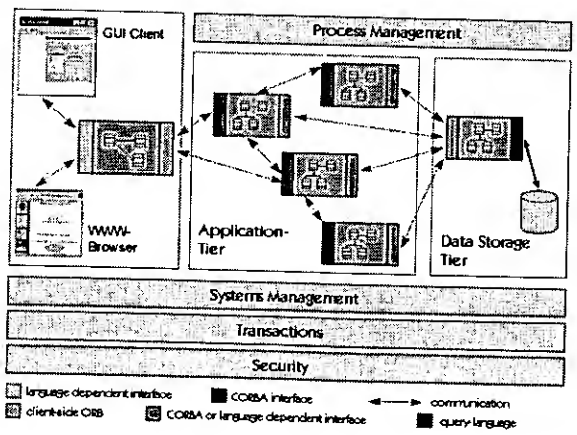
- How to conduct transactions is controlled by the client. Advanced techniques like two-phase-committing can't be run.
- PCs are considered to be "untrusted" in terms of security, i.e. they are relatively easy to crack. Nevertheless, sensitive data is transferred to the PC, for lack of an alternative.
- Data is only "offered" on the server, not processed. Stored-procedures are a form of assistance given by the database provider. But they have a limited application field and a proprietary nature.
- Application logic can't be reused because it is bound to an individual PC-program.
- The influences on change-management are drastic: due to changes in business politics or law (e.g. changes in VAT computation) processes have to be changed. Thus possibly dozens of PC-programs have to be adapted because the same logic has been implemented numerous times. It is then obvious that in turn each of these programs have to undergo quality control, because all programs are expected to generate the same results again.
- The 2-tier-model implies a complicated software-distribution-procedure: as all of the application logic is executed on the PC, all those machines (maybe thousands) have to be updated in case of a new release. This can be very expensive, complicated, prone to error and time consuming. Distribution procedures include the distribution over networks (perhaps of large files) or the production of an adequate media like floppies or CDs. Once it arrives at the user's desk, the software first has to be installed and tested for correct execution. Due to the distributed character of such an update procedure, system management cannot guarantee that all clients work on the correct copy of the program.

3- and n-tier architectures endeavour to solve these problems. This goal is achieved primarily by moving the application logic from the client back to the server.

What is 3- and n-tier architecture?

From here on we will only refer to 3-tier architecture, that is to say, *at least* 3-tier architecture.

The following diagram shows a simplified form of reference-architecture, though in principal, all possibilities are illustrated.



Client-tier

Is responsible for the presentation of data, receiving user events and controlling the user interface. The actual business logic (e.g. calculating added value tax) has been moved to an application-server. Today, Java-applets offer an alternative to traditionally written PC-applications. See our Internet-page for further information.

Application-server-tier

This tier is new, i.e. it isn't present in 2-tier architecture in this explicit form. Business-objects that implement the business rules "live" here, and are available to the client-tier. This tevel now forms the central key to solving 2-tier problems. This tier protects the data from direct access by the clients.

The object oriented analysis "OOA", on which many books have been written, aims in this tier: to record and abstract business processes in business-objects. This way it is possible to map out the applications-server-tier directly from the CASE-tools that support OOA.

Furthermore, the term "component" is also to be found here. Today the term pre-dominantly describes visual components on the client-side. In the non-visual area of the system, components on the server-side can be defined as configurable objects, which can be put together to form new application processes.

Data-server-tier

This tier is responsible for data storage. Besides the widespread relational database systems, existing legacy systems databases are often reused here.

It is important to note that boundaries between tiers are logical. It is quite easily possible to run all three tiers on one and the same (physical) machine. The main importance is that the system is neatly structured, and that there is a well planned definition of the software boundaries between the different tiers.

The advantages of 3-tier architecture

As previously mentioned 3-tier architecture solves a number of problems that are inherent to 2-tier architectures. Naturally it also causes new problems, but these are outweighed by the advantages.

- Clear separation of user-interface-control and data presentation from application-logic. Through this separation more clients are able to have access to a wide variety of server applications. The two main advantages for client-applications are clear: quicker development through the reuse of pre-built business-logic components and a shorter test phase, because the server-components have already been tested.
- Re-definition of the storage strategy won't influence the clients. RDBMS' offer a certain independence from storage details for the clients. However, cases like changing table attributes make it necessary to adapt the client's application. In the future, even radical changes, like let's say switching form an RDBMS to an OODBS, won't influence the client. In well designed systems, the client still accesses data over a stable and well designed interface which encapsulates all the storage details.
- Business-objects and data storage should be brought as close together as possible, ideally they should be together physically on the same server. This way - especially with complex accesses - network load is eliminated. The client only receives the results of a calculation - through the business-object, of course.
- In contrast to the 2-tier model, where only data is accessible to the public, business-objects can place applications-logic or "services" on the net. As an example, an inventory number has a "test-digit", and the calculation of that digit can be made available on the server.
- As a rule servers are "trusted" systems. Their authorization is simpler than that of thousands of "untrusted" client-PCs. Data protection and security is simpler to obtain. Therefore it makes sense to run critical business processes, that work with security sensitive data, on the server.
- Dynamic load balancing: if bottlenecks in terms of performance occur, the server process can be moved to other servers at runtime.
- Change management: of course it's easy - and faster - to exchange a component on the server than to furnish numerous PCs with new program versions. To come back to our VAT example: it is quite easy to run the new version of a tax-object in such a way that the clients automatically work with the version from the exact date that it has to be run. It is, however, compulsory that interfaces remain stable and that old client versions are still compatible. In addition such components require a high standard of quality control. This is because low quality components can, at worst, endanger the functions of a whole set of client applications. At best, they will still irritate the systems operator.
- As shown on the diagram, it is relatively simple to use wrapping techniques in 3-tier architecture. As implementation changes are transparent from the viewpoint of the object's client, a forward

' strategy can be developed to replace legacy system smoothly. First, define the object's interface. However, the functionality is not newly implemented but reused from an existing host application. That is, a request from a client is forwarded to a legacy system and processed and answered there. In a later phase, the old application can be replaced by a modern solution. If it is possible to leave the business object's interfaces unchanged, the client application remains unaffected. A requirement for wrapping is, however, that a procedure interface in the old application remains existent. It isn't possible for a business object to emulate a terminal. It is also important for the project planner to be aware that the implementation of wrapping objects can be very complex.

Critical Success Factors

System interface

In reality the boundaries between tiers are represented by object interfaces. Due to their importance they have to be very carefully designed, because their stability is crucial to the maintenance of the system, and for the reuse of components.

Architecture can be defined as the sum of important long-term system interfaces. They include basic system services as well as object-meta-information. In distributed object systems, the architecture is of great importance. The architecture document is a reference guideline to which all the developers and users must adhere. If not, an expensive and time- consuming chaos results.

Security

Here we are dealing with distributed systems, so data-protection and access control is the important thing. For the CORBA-standard, OMG completed the security.service in different versions in 1995. In the simplest form (level "0") authentication, authorization and encryption are guaranteed by Netscape's secure-socket-layer protocol. Level 1 provides authentication control for security unaware applications. Level 2 is much more fine-grained. Each message invocation can be checked against an access control list, but programming by the ORB user is required. There are implementations for all levels available today.

Transactions

For high availability, in spite of fast processing, transaction mechanisms have to be used. Standardised OMG interfaces are also present here, and many implementations have been done. The standard defines interfaces to two-phase-commit and offers new concepts like nested transactions.

Technical infrastructure

There are currently numerous strategies to realise 3-tier architecture. d-tec GmbH sees distributed object systems, with CORBA in the lead, as the most efficient concept currently available. It connects the object oriented paradigm (which proved itself by abstracting complex systems) to tried and trusted communication technologies like TCP/IP. In addition to basic functions CORBA offers a multitude of useful and complementing services.

In order to cover these points and to adjust them, it is necessary to have competent personnel, who's aim

is to develop systems architecture that is tailor-made and has load capacity. Tool usage should be kept at a minimum. Not only is it important that the functionality and performance requirements of the new applications system are met, but - as a whole - also the aspects of change-management, system-management, the interoperability between components and security. For the realisation of a distributed system, all parties involved have to meet, the systems engineer, the applications developers, the operators and the management. The scale of efficiency isn't based on a short-term focused, tools-based approach with a questionable long-term result. The pay-back is in the long run with low maintenance cost through better designed systems.

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ARTICLES

New Tools Pump Life into MSF

Rainer Mauth

Microsoft Solution Framework (MSF) is the company's answer to the requirements of large-enterprise computing. It's a reference guide to three-tier client/server development and a concept of building distributed applications using OLE controls. Until now, MSF has been a framework without concrete design rules and basic components. This situation is changing now that vendors are starting to build enterprise applications based on Windows NT and Windows 95.

"MSF doesn't unveil how to implement business processes or how to design components," says Michael Engel, product manager at Siemens Nixdorf, Inc.'s (SNI) applications software unit (Paderborn, Germany). "However, in the real world, developers need design standards." SNI is now porting its business management platform Alx-Comet from its proprietary and Unix systems to Windows NT.

To implement the Alx-Comet business model, the company had to render the MSF skeleton. "Our goal was to create a cookbook for developers rather than a framework," explains Engel. SNI designed a library of OLE automation components for Visual Basic 4.0, including a code generator and a data dictionary.

The new SNI environment, code-named Merlin, allows developers to create a Visual Basic code skeleton with standardized event and error handling, user-interface (UI) properties, and Open Database Connectivity (ODBC). Thus, they can focus on implementing their business

models. Merlin contains reference code and specifies how to tie UIs and underlying data services to a business management layer.

Beyond third-party developers of Alx-Comet branch solutions, Merlin will also be available to others. Microsoft plans to establish the SNI architecture as a standard for building large-scale business appl ications under Windows and to sell it with MSF.

On the data-modeling side, there is another approach to give more life to MSF. Select Software Tools' (Cheltenham, U.K.) new rapid application development (RAD) tool, Select Enterprise for Visual Basic, combines Rumbaugh/OMT modeling and Jacobsen case techniques with OLE 2.0 and remote automation to design MSF-compatible client/server architectures. Select product manager Edward Holt says the modeling tool adds greater detail to the architectural and process frameworks of MSF and supports separate object models for each tier of a multitier application. It generates Visual Basic code.

SNI and Select plan to release their tools in the first quarter of next year.

SNI Tools Ease MSF Compatibility

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SNI's tools make it easier to develop MSF-compatible client/server applications for large enterprises. The tools automatically generate a Visual Basic code skeleton with event and error handling, UI properties, and database connectivity.

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